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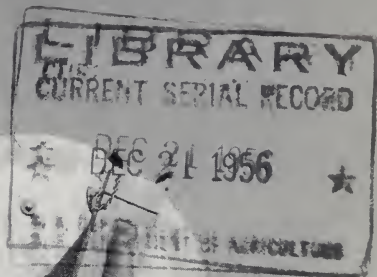
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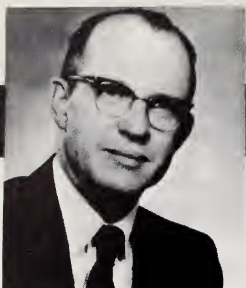
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Rural Lines

DECEMBER
1956

Telephone Wire Goes Underground.
— Is It Feasible? Page 8



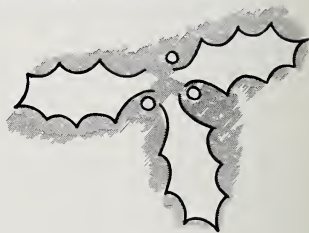


A Message from the

ADMINISTRATOR



FROM all of us in the Rural Electrification Administration to all of you – to the millions of men, women and children in rural America with whom we are working to make modern electric power and telephone service a permanent reality – our sincere wishes for a truly Merry Christmas and a Happy New Year..



David A. Hamill

Administrator.

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At Fifty-nine Years of Age, Colorado Phone Company Takes

New Lease On Life

SUBSCRIBERS of the Delta County Cooperative Telephone Company, Paonia, Colo., are looking forward to the not-too-distant day when one modern telephone will give them the local and toll service now requiring two installations.

This happy situation will be brought about through an REA loan granted the 59-year old system to improve its existing service, provide initial service to almost 500 new subscribers and to arrange toll connections through the Mountain States Telephone and Telegraph Company.

O. J. Stone, secretary-manager, who has served the Delta County Company for 50 years, is a pioneer with young ideas. He joined the cooperative when it was struggling against odds to exist and worked hard to build it to its present subscriber list of nearly 2300. Now he can look to even greater accomplishment — bringing modern dial service to the people of his adopted county, providing direct connection by long distance for the first time to the world outside and ending the duplication of service that has long existed between his company and Mountain States T & T.

Mr. Stone recalls that he was about 21 years old when he first visited Paonia, actually on a vacation trip to see the North Fork

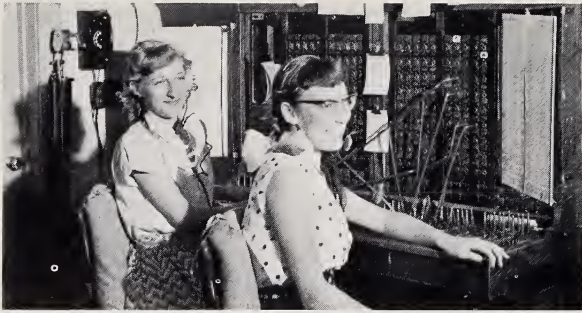
Valley, known as the "Garden Spot of the World." When the folks at the hotel learned that he had previously had telephone experience, they immediately turned him over to Dr. Williard F. Follansbee, who was then working hard to keep the telephone cooperative in existence.

He was so successful in straightening out some mechanical difficulties that the doctor insisted that he start right in to work, and thus began a happy association that has continued for half a century.

Evidently there is something about the rural system that nurtures permanence, for six current officers and directors total among them 173 years of direct association with the company. Leading the rest is Mr. Stone with his 50 years of service, but close behind are F. H. Drexel, of Crawford, with 47 years, and Harry H. Addams, of Hotchkiss, 32 years.

At the present time many of the cooperative's subscribers also have telephones served by the Mountain States T & T. The bells are adjusted so that the patron can tell which telephone is ringing.

This duplication will be eliminated when the REA-financed construction is completed in the borrower's area. At that time each company will relinquish a



These smiling operators give cheerful service to subscribers on the multi-party lines of the system. Modernization plans call for conversion of this and four other exchanges to automatic dial service.

portion of its area to the other, and will sell to the other its outside plant in the relinquished area.

As D. A. MacLean, assistant vice-president of Mountain States, says: "Actually there is no real financial gain to be made by either side; the gainers will be rural and town subscribers who will receive better service. This is an example of how large telephone companies and small independents or co-ops can work out their difficulties on a satisfactory basis."

The Delta County Co-op loan of \$1.36 million is the largest REA telephone loan made in the State of Colorado. With it the company will convert five magneto exchanges to dial central offices, rebuild 405 miles of existing line and construct 34 miles of new line. Four hundred and ninety-four rural subscribers now without phones will be provided service for the first time.

The rural system serves Delta, Gunnison and Montrose counties in western Colorado, with exchanges at Cedaredge, Crawford, Eckert, Hotchkiss and Paonia. When the expansion and modernization is completed, the company will have 489 miles of line serving slightly more than 2700 subscribers.

Although the telephone system

began service in January, 1897, the little company had difficult times for several years. It was not until 1903 that it was granted a state charter as a telephone co-op, largely through the efforts of Dr. Follansbee, a pioneering physician from Illinois, who devoted much of his time and money to persuade his neighbors to invest in the co-op. The doctor saw the great value of an efficient telephone company for helping keep in touch with his far-flung patients in the area.

Much of the extension of the system took place after Mr. Stone's arrival on the scene in 1906. He still has vivid memories of the difficulties encountered in building pole line through the rugged country.

"In those days," he says, "we thought that the bigger the pole was the longer it would stand. So we put in some that were about two feet thick at the butt. Unfortunately, we found out that the bigger they were the harder they fell."

However, many red cedar poles erected 50 years ago are still standing. At that time they cost one dollar per pole, delivered on the ground.

During the entire life of the company there have been but two rate increases, one in 1931 and one

in 1952. Back in the 1930's when folks came on hard times financially, the employees of the company voluntarily took a cut in wages to keep the system going. Many a subscriber traded in produce or livestock for payment of telephone bills.

Not only employees, but subscribers as well, have shown extraordinary good will in supporting the system. Even today there are more than twenty subscribers on some lines. One line to Ragged Mountain has 28 subscribers, and both operators and patrons are hard put to get the right party on a call. This 50-mile stretch of one-wire line has been serving the Ragged Mountain area since 1919. In winter time snow drifts often build up as high as the wire on the poles, and maintenance becomes a major operation by snowshoes, jeep and strong constitution.

Needless to say, these subscribers are following with intense interest the plans for conversion to modern dial service.

Mr. Stone, himself, is amazed by the building schedule he has undertaken.

"Here we have been building this system for 50 years," he says, "and now we are going to rebuild it in just a couple of years. It just doesn't seem possible.

"So many people have cooperated. Some have worked and helped for a lifetime, like Wes Erickson, Grant Miller and Herman Schulte. I would like to be able to give credit to all of them. In fact, the story of this company would fill a book."

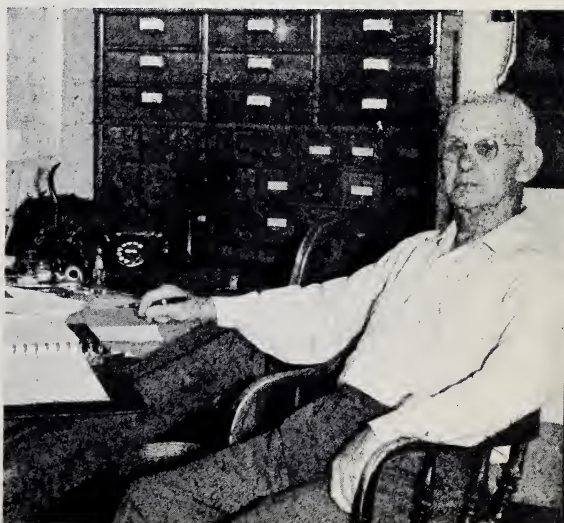
Some day, perhaps, that story may fill a book. Mr. Stone has a sharp and retentive memory of the colorful history of the sys-

tem. He has carefully preserved records that date back to the very first day of the company's existence in 1897. Directories have been preserved from the first publication in 1903 to the present day. Incidentally, several listings have remained unchanged in all the directories during that time.


All the valuable records of the company are housed in the basement of the Paonia exchange, including all correspondence from 1900 to 1956, Mr. Stone's carefully typed minutes of every board of directors meeting since he took over as secretary in 1913, and his annual financial statements.

President Harry H. Addams, who is also president of the Hotchkiss Bank, is taking keen interest in the expansion and modernization plans. He points out that the growth and progress of the Delta County Cooperative Telephone Company has closely followed the economic progress of the county. If that parallel continues, good things seem in store for both the telephone system and the area it serves.

Secretary-manager O. J. Stone is shown here in his office. Note two phones on desk. One will serve all requirements when conversion is completed. Wall phone behind Mr. Stone is relic of early days of the 59-year-old system.



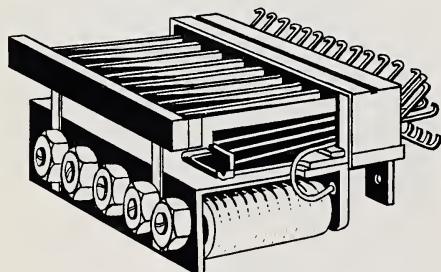
Do's and Don'ts In Dial CENTRAL OFFICE MAINTENANCE



THE new dial central office you have in operation, or that might now be on your planning board, is a complex system of relays, switches, signals, lamps, batteries and other equipment designed to provide efficient and economical telephone service to your subscribers.

However, REA's telephone operation and maintenance engineers remind us that this intricate and expensive equipment can't just be closed up in a room and left to do the telephone system's work unaided. Proper maintenance is a "must" to keep the dial central office functioning as it should and to avoid service failures and costly replacement.

A maintenance man, confronted for the first time by the maze of equipment, wires and parts, may be appalled at the idea of keeping the setup in top working condition. This is true of your long-time employees, if they have been working on magneto or common battery equipment, as well as new men hired for maintenance work.



To assist the uninitiated in this apparently herculean task, the REA engineers have compiled a list of "do's" and "don'ts" which, if observed, will not only eliminate many headaches for the maintenance man, but will assure better service to subscribers and help hold down maintenance costs.

The engineers suggest that management set up a maintenance schedule for employees to follow, and then check periodically to be sure the recommended procedure is being carried out.

Here's the guide list compiled by the engineers:

DO's !

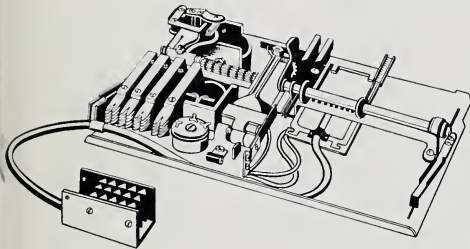
1. Be thorough in making C.O.E. acceptance tests. (*A good many causes of future troubles can be eliminated at this time*).
2. Be sure you have all of the manufacturer's maintenance information and instructions. (*These make up the maintenance man's "bible"*).
3. Set up a routine maintenance program immediately after cut-over. (*The old saying "a stitch in time saves nine" applies here*).
4. Set up the maintenance program on the basis of the manufacturer's recommendations. (*He should best understand the needs of his equipment*).
5. Keep accurate and adequate

records of troubles reported and discovered. (*These constitute the "map" you should use to chart your future maintenance course*).

6. Analyze trouble records regularly and carefully to determine trouble areas. (*The effectiveness of the maintenance program will also show up here*).

7. Modify the routine maintenance program as necessary to concentrate effort on the trouble areas. (*Get the most of your maintenance dollar*).

8. Be sure the central office battery is maintained in fully-charged condition. (*This is the*



central office "spare tire").

9. Keep ventilating louvers tightly sealed during dusty or humid periods. (*The average filter is only about 60 percent efficient in removing dust particles*).

10. Use an adsorbent type dehumidifier when operation will be required at temperatures below 65° F. (*Consult your local weather bureau for reliable relative humidity information*).

11. Use sweeping compound or a damp mop when removing dust from the floor of the CDO building. (*Keep the dust from becoming airborne*).

12. Use a lightly oiled, lint-free rag to remove dust from equipment covers and frames. (*Lint can be more troublesome than dust*).

13. Use the oil, or oils, recommended by the manufacturer for lubricating. (*These have been specifically selected to perform satisfactorily under expected temperature extremes*).

14. Use the tools recommended by the manufacturer for equipment adjustments. (*A "screw-driver mechanic" in a dial central office is as dangerous as a bull in a china shop*).

DON'Ts !

1. Allow the temperature in the CDO building to drop below 15° F. (*The reserve capacity of the storage battery drops off rapidly below this point*).

2. Allow the relative humidity in the CDO building to exceed 60 percent. (*Moisture is the sworn enemy of central office equipment*).

3. Use a volatile base wax on the asphalt tile flooring in the CDO. (*The fumes released are very corrosive to relay contacts*).

4. Use turpentine base paint for the equipment room walls and ceiling. (*The fumes from these products are also corrosive to relay contacts*).

5. Allow the electrolyte in the central office battery to get below the tops of the separators **at any time**. (*This would cause permanent loss of part of the battery capacity*).

6. Remove dust from equipment items by blowing; use **suction** method only. (*It is the dust that becomes airborne that settles out on relay contacts*).

7. Allow the CDO building to be used as a "hangout". (*The dust and dirt tracked in can be the source of many troubles*).

Specially designed plow slits ground to 24" depth, 2" width and lays wire in single operation. Truck following the plow tamps and flattens disturbed earth with tires. Contractor on wire burying job was the Frank Horton Company, Lamar, Missouri. Seventeen miles of line were laid in three-day operation, and telephone service was provided for 26 new subscribers. Wire is buried below depth of frostline.



NOW THEY BURY TELEPHONE WIRE

SEVENTEEN miles of telephone wire were "plowed under" in Kansas in October in a full-scale test conducted under REA auspices on the lines of the Craw-Kan Telephone Cooperative Association, Girard.

Continuing tests by REA and the cooperative will determine wire's resistance to rodents, insects, corrosion and lightning. Results of tests will help decide possibility of buried plant, long of interest to the industry to supplant construction and maintenance of pole lines.



Four different types of wire, especially made for REA by Plastic Wire and Cable Corp., Jewett City, Conn., were used in test. Wire at left has bronze tape shield, outer vinyl sheath. Primary insulation on all types is polyethylene.



Buried line comes aboveground for subscriber service drops, splices and terminals. Here lineman brings wire from ground to terminal pole for lead into subscriber's house. Note close approach wire-laying plow makes to standing pole.



Most rural road crossings pose no problem in laying buried wire. Plow simply cuts slit across road, lays wire beneath surface. Road is then easily smoothed, restoring original surface.



Miles of pole line could be eliminated in the future if buried wire holds up under tests. REA telephone borrowers, about 60 percent of their pole line miles in single circuit leads, will follow test results with close interest.





Terminal end of buried wire is tested prior to placing into service by Warner T. Smith (center), REA assistant chief for staff engineering. Holding test meter is John Frerichs, manager of Craw-Kan. At right is Everett Luckett, of J. B. Payne Engineering Co., borrower's consulting engineer.



Telephone Advisers Study Cost

Sub-group Reviews

Engineering Charges

With Eye To Economies

THE newly appointed REA telephone advisory committee met in Washington in October with USDA and REA officials and named a sub-committee to investigate the prevailing costs of engineering services for independent telephone companies and co-operatives.

Named to the sub-committee to look for economies for REA borrowers were:

Harold L. Ericson, pres., Minnesota Central Telephone Co., Hector, Minn., chairman; Fred Harris, pres., Southern Telephone Co., Jackson, Mich.; Joe Roberts, pres., Inter-County Telephone Co., Gallatin, Mo.; Dale D. Jacobson, manager, Sully Buttes Telephone Cooperative, Highmore, S. D., and Edward D. Hildreth, manager, DeKalb Telephone Cooperative, Alexandria, Tenn. All sub-committee members are engineers.

Sixteen of the 17 consultants

recently appointed by Administrator David A. Hamil attended the Washington meeting. Among the subjects under discussion was the industry opinion survey made last spring and the comments and criticisms found in the replies.

Other members of the telephone advisory committee working with the REA administrator are:

Orla L. Moody, staff engineer, American Telephone and Telegraph Co., New York, N. Y., for the Bell systems; William C. Henry, president, Northern Ohio Telephone Company, Bellevue, Ohio, for the U. S. Independent Telephone Association; Riggs Shepherd, manager, Southwest Texas Telephone Cooperative, Hondo, Texas, for the National Telephone Cooperative Association.

John Birchmore, president, Comer Telephone Company, Comer, Ga.; Roy C. Boecher, manager, Pioneer Telephone Cooperative, Kingfisher, Okla.; Donald H. Brooks, manager, West River Mutual Aid Corporation, Hazen, N. Dak.; Daniel B. Corman, executive vice-president, Northeastern Telephone Corporation, London, Ky.; Richard D. Crowe, manager, Dos Palos Telephone Company, Dos Palos, Calif.; Harold C. Ebaugh, manager, Triangle Telephone Association, Havre, Mont.

S. A. Lane, president, Western Arkansas Telephone Company, Russellville, Ark.; Dean Searls, manager, Adams Telephone Cooperative, Camp Point, Ill.; Herbert H. Welsh, president, Northern Kansas Telephone Company, Effingham, Kans.

Members at the Washington meeting elected Mr. Corman as chairman of the advisory group.

Rural Lines



Rural Lines

REA



Photo tour of 1956 National Power Use Workshop, pages 14 to 17.

INTER-INDUSTRY FARM ELECTRIC UTILIZATION COUNCIL

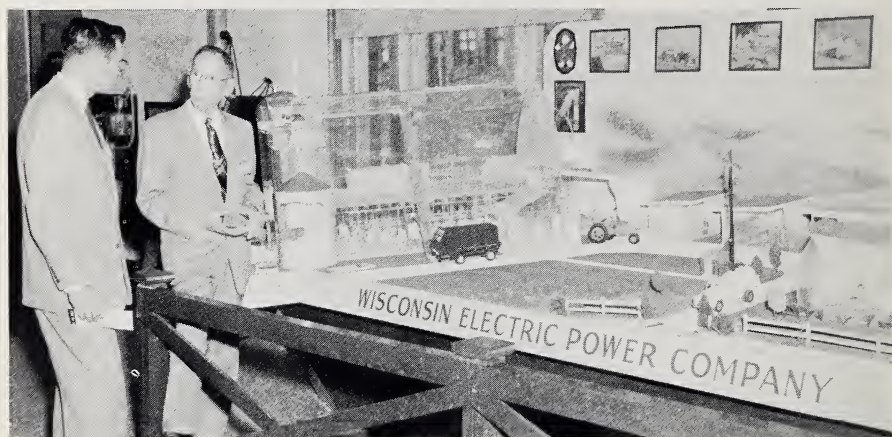




I was one of more than 500 registrants from 42 states. Pretty Dorothy Schaefer, who helped at registration desk, works for Dairyland Power Cooperative, LaCrosse, Wis.

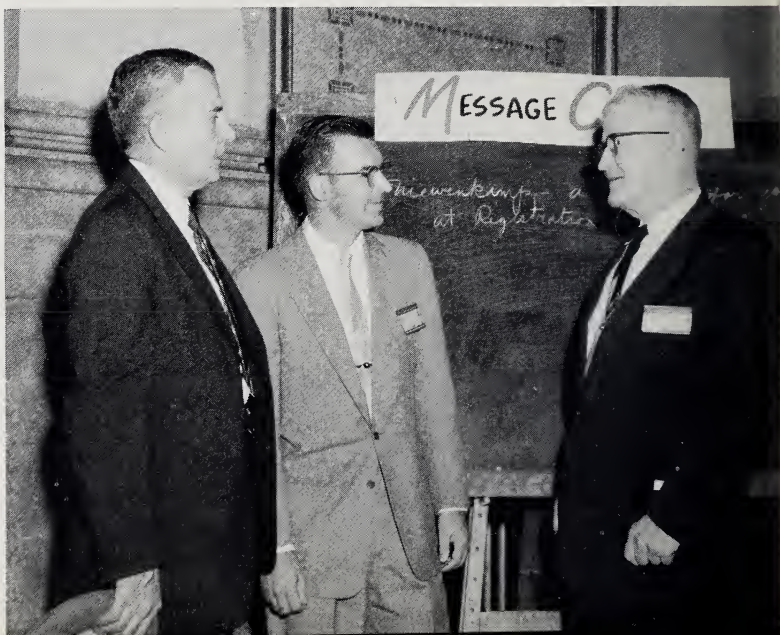
WORKSHOP

WITH the help of RURAL LINE'S camera eye, Richard F. Marsh, freshman power use adviser of the Monona County Electric Co-op, Onawa, Iowa, lists the highlights of his two-day visit to the 1956 Workshop in Milwaukee. Power use promotion is new both to Dick and to the western Iowa co-op he joined in August. His experience includes 8 years of farming, 4 years in appliance and wiring business, a year at Hastings (Nebr.) College.



Exhibits were swell. Above, model of all-electric dairy farm is controlled by B. J. Auchter, Wisconsin Elec. Power Co.

You meet lots of fine folks. Like W. W. Lynch (left), pres., Texas Power & Light Co., and Oliver Kimbrough, manager, Farmers' Mutual Electric Cooperative, of Clovis, N. Mexico.



TOUR

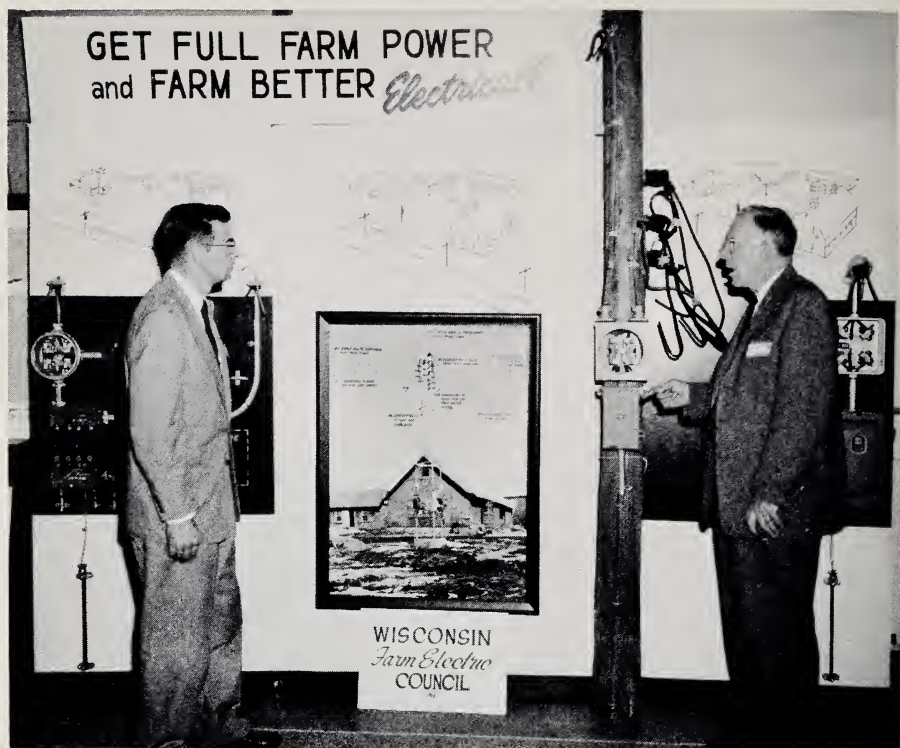
REA Administrator David Hamil told me power use promotion is a 'must' if co-ops are to stay alive. He made a hard-hitting talk at the Workshop, set the keynote for the two-day session.



PRACTICE WHAT YOU PREACH

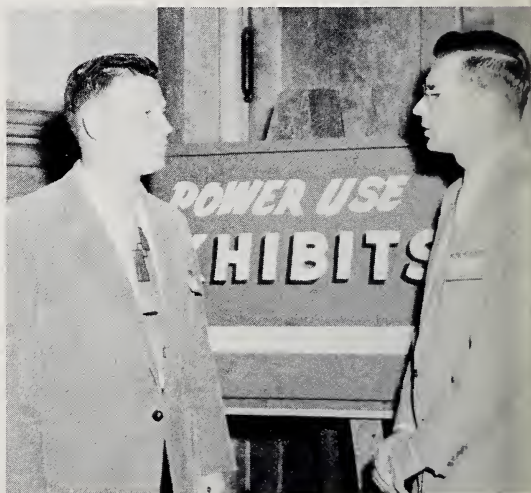
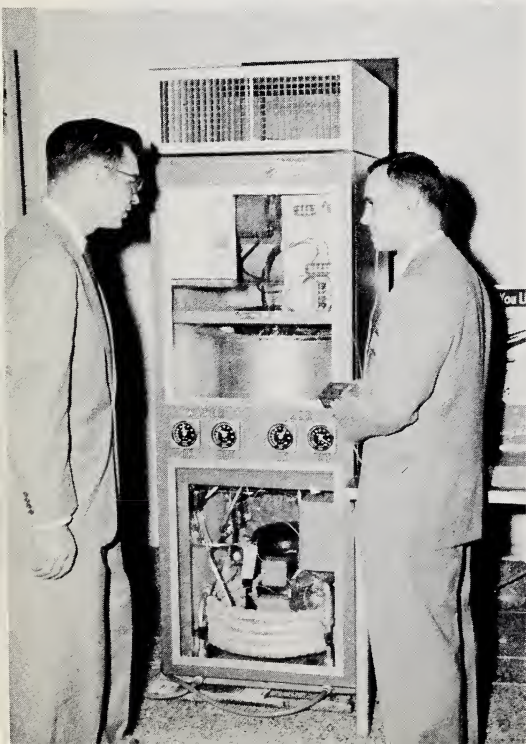
Texans do it big. M. G. Hyltin, manager of the Pedernales and the Lower Colorado River electric co-ops, told me that all his directors, top employees and two attorneys have gone all-electric in their homes and farms. The directors shown here backed up that 'electrifying' claim. Left to right, they are H. B. Armstrong, Ben Wolz, Max Zuehlke, Robert E. Brown and Babe Smith. More power to these gentlemen.





A. J. Von Burg, Wisconsin Power & Light Co., Madison, emphasizes importance of better farm wiring. This display was provided by the Wisconsin Farm Electric Council.

This was my first chance to see how the 'water to air' heat pump works. Dials indicate temperature of water and air.



I made a host of friends, among them Bob Carroll, an ag engineer with the Broad River Electric Co-op at Gaffney, S. C. We exchanged information about electric applications in our respective areas.



Another Iowan, Casey Canavan of Southwestern Federated Power Co-op at Creston, helped me make a tape recording about my Workshop visit for use on radio station when I get back home.



George Doak explained to me how Georgia Farm Electrification Council staged its first inter-industry water system fair held at Winder this year.



Panel leader M. G. Hylin convinced me that planned load-building really pays! Charts compare monthly kwh sales of a typical co-op with one that has pushed electric heating to offset air-conditioning peak.



Before taking off, I bought this new sales promotion kit to use with the power use plans I am taking back to Manager George Gerking and our co-op directors.



Margins and Capital

Are Your Present Plans Geared to Future Co-op Security?

MANAGEMENT and directors are urged in a recent REA Bulletin, "Borrowers' Margins and Capital", to take a fresh look at their electric co-op's long range objectives and the financial plan designed to reach those objectives.

One of the board's most important responsibilities is planning—planning to meet future service requirements and planning to maintain business security.

REA recommends that each board determine how margins shall be fitted into its plans for attaining the objectives of the co-op. The bulletin does not suggest change for the sake of change, but rather urges that current objectives and financial plans be carefully reviewed to see that they meet present and foreseeable needs.

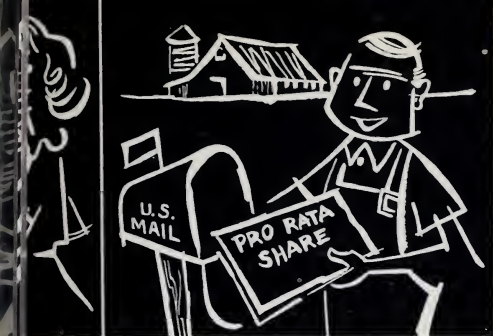
Every borrower should build up and maintain a net worth adequate to assure sound financial structure, REA says. The bulletin warns against a general re-

tirement of margins or other general disposition of capital until the co-op has achieved and can maintain this net worth.

Recognizing the complexity of the subject and the varied financial requirements of borrowers, REA does not attempt to set forth detailed objectives or plans. An attachment to the bulletin offers a number of factors for consideration. It points out that every electric cooperative should develop specific objectives in at least these three areas: (a) rate of debt repayment; (b) fairness to the consumer, and (c) administrative simplicity. There may be, of course, additional objectives of equal importance to some borrowers in deciding how to handle their margins.

The attachment emphasizes that it is desirable to review from time





to time the co-op's objectives and the financial plans established to reach them.

It also points out that retail rates are closely tied in with any consideration of net worth, since it is the level of retail rates that largely determines whether revenue will be sufficient to provide margins and thus build net worth. The amount of margins required for financial soundness varies with different co-ops and is affected by such things as the age of the system, financial obligations, financial requirements, availability of loan funds, and the judgment of the board as to what constitutes financial soundness.

Every cooperative has an obligation of some sort to operate on a non-profit basis. Since margins must be retained in the business for at least some time, most of the co-ops achieve non-profit operation by obligating themselves to assign, and at the appropriate time to refund in cash, the revenues in excess of the cost of service. These assigned margins are not debt, but represent a part of the net worth of the cooperative. Assigned margins will not be considered debt until such time as the board of directors declares all or part of them payable.

Without attempting to cover all the possible situations that might apply to individual co-ops, the bul-

letin attachment offers several "illustrative plans" which set forth possible objectives and suggested plans for reaching them. These will be useful to board members as "take-off" points in evaluating the present objectives and financial plans of their co-ops.

The bulletin cautions that any plan should be submitted to the cooperative's attorney for review as to its compliance with any State or Federal laws that may apply. It likewise suggests that the experience of other borrowers in the electric program be drawn on, and that cooperatives in other fields might be consulted for useful ideas and information. REA personnel and facilities, of course, are available to all borrowers to furnish information on



the various aspects of financial planning and methods of handling margins and capital.

The bulletin stresses the importance of fully explaining to member-consumers any plan for handling margins and capital, in order that they will understand the plan and support the directors in carrying it out.

A Small Newspaper Doing a Big Job
On Consumer Relations — That's the

NORA CO-OP NEWS

THE *Nora Co-op News* is accomplishing what it set out to do—build good will in Rio Arriba county, New Mexico, and get its rural people working together in harmony on their electric co-op.

The newsy, personalized little paper, published by the Northern Rio Arriba Electric Cooperative of Chama, runs a line on its mast-head which says: "Chama, N. M., —Where Anything Can Happen And Usually Does."

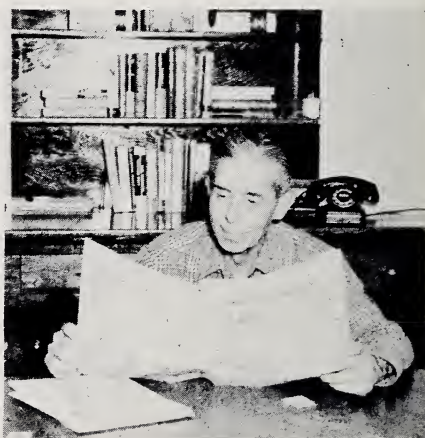
Co-op manager Les Dumond is editor of the paper which carries a list of local correspondents, foreign correspondents and feature writers that might be envied by a big metropolitan daily. Mr. Dumond is a former Texas automobile dealer who came to Chama to vacation and stayed on to live. He helped organize the co-op, served on the board of directors and finally took over his present job.

When he became manager in 1952, things were far from harmonious in the co-op, and much of the difficulty seemed to stem from a lack of understanding among the members of the problems and aims of the co-op, plus the absence of any newspaper that might serve as a connecting link between the various communities in the county. Mr. Dumond suggested a co-op newspaper that would not only carry accounts of the electric system's program and

operations but would also be chockful of news about the communities in the service area. The board of directors promptly okayed the idea.

They have never regretted the move, and the manager feels that the present cooperation and willingness of the members is due in large measure to the *News*.

Chama, headquarters of the co-op, is a town of about 800 population in the northern section of New Mexico, close to the Continental Divide. Founded in 1865, it is on the line of the historic Denver & Rio Grande narrow gauge railroad. Elevation of the town is 7860 feet, which may help to account for the breezy, informal and original presentation of



Mr. Dumond looks over a completed issue of the *News*. The paper not only keeps members informed of the affairs of the co-op, but carries general news of the entire Northern Rio Arriba service area.

news in the co-op paper. At any rate, because it is home of the Northern Rio Arriba Co-op, plus the interest and influence of the *News*, Chama is the focal point of information for members in a dozen neighboring communities.

When Mr. Dumond got the go-ahead signal for the paper, he cranked out the first few issues by mimeograph, anxious to get started without delay on member education as a means of promoting good will and winning backing for the co-op.

"Those first issues went over pretty well", he says, "and before long we were printing our paper. We have been pleased and heartened by the good reception it has received from our members.

"We have a large staff of volunteer reporters and our aim is to keep the paper informative and newsy. We fill it with personal items about members and keep readers posted on what their co-op is doing and planning. Now that they know more about their co-op, they feel that they are a part of it and take a friendly interest in it. Member participation in the affairs of the co-op has increased and we say the *News* is largely the reason."

In a recent issue of the *News*, reporters covered such items as these: a proposed new post office for Chama; the availability of polio vaccine; a movement to change the site of the county seat; the building of a new bridge over the Chama River at Rutherford; a story about a new ground observer post; numerous personal items such as marriages, blessed events, vacations and social activities of hundreds of members in the area; word that fishing prospects are



Going to press with *Nora Co-op News*. Nancy Benavidez (left) types up news stories, while manager-editor Les Dumond and Verna Martinez plan layout for the upcoming edition of the newspaper.

good, and a progress report on the co-op's new transmission line and substation.

Members receive the monthly paper free of charge. Cost of publishing runs about 1½ percent of the co-op's annual revenue, with part of the expense borne by advertising.

Manager-editor Dumond explains that a reporter or two has been recruited from each community in the co-op's service area, as well as from all the "live wire" clubs and organizations. He has to prod the staff a bit about ten days before each deadline, but generally the copy is in his hands well ahead of time. The result of this arrangement is news coverage that holds interest for every member.

"As I see it", Mr. Dumond says, "some co-ops are missing a good bet by not fostering closer communication with members through a newsy publication. I think a well edited newspaper is

essential in the management of any cooperative organization”.

Another move by Northern Rio Arriba to promote neighborliness and good will among its members is its planning of colorful and interest-packed annual meetings which have attained “fiesta” proportions. At the last such meeting about 130 prizes, gifts of manufacturers, local merchants and the co-op, were given out among attending members. All the proceedings at the annual meetings are conducted in both Spanish and English, since there are many Spanish-speaking consumers. A great number of these are descendants of the Conquistadors who settled the area several centuries ago.

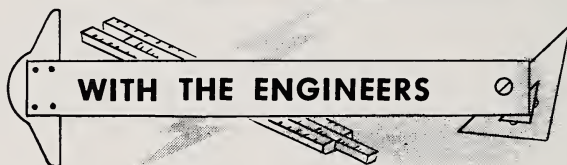
The co-op keeps on the lookout for other good will builders, too.

It is considering setting up a branch of the state extension library in its Chama headquarters, the entire area now being without library service.

All these efforts towards better understanding and good neighborliness are helping the co-op progress. Today there are about 1100 consumers and power use is growing steadily.

Mr. Dumond believes that a reasonable sum of money spent on effective member education is a good investment for every REA-financed cooperative.

“Our board feels that the money we spend on our paper and on our annual meeting is very worthwhile indeed”, he says. “It has certainly improved our member relations and made a host of new supporters for the co-op”.



Some recloser operations during lightning storms may be expected even when all arresters are in good condition.

Copper to aluminum connections exposed to weathering should be made with the aluminum on top; otherwise, increased corrosion of the aluminum will result.

Third harmonic voltages of more than 1000 volts have been measured on long lightly loaded distribution lines.

Anchor rod corrosion is most liable to take place in soils which provide the best electrical ground.

This year marks the 100th anniversary of the birth of Nikola Tesla, one of the greatest electrical inventors of all times.

Sixty cycle voltages as high as three times normal are possible on the open phase after one or two phases serving a small three-phase transformer bank opens.



Illinois Hot Line Crews Attend Special School

THE Illinois Hot Line Maintenance Training Program recently completed the second session of its 5-year training plan, with each of the 28 hot line crews from the rural electric cooperatives of the state getting a full week of training.

REA safety engineers who were among instructors in the program report that the Illinois plan is a comprehensive training course that includes both classroom instruction and actual operation on typical pole structures on Southern Acres Campus of Southern Illinois University.

Prime purpose of the training school is to produce "hot stick crewmen who are trained mechanics". To accomplish this the crewman must understand the construction and use of each tool, know whether it is functioning properly and be convinced that hot line work correctly performed is a safe form of line maintenance.

Efficient, well trained hot stick crews are more important than ever with the increased use of electric power in rural areas. Lines must be maintained hot to avoid service shutdowns which are costly to the co-op and to member-consumers alike.

Program co-sponsors are the Illinois Job Training and Safety Committee of Rural Electric Cooperatives, Vocational Technical Institute of Southern Illinois University and the Trade and Industrial Education Service of the Illinois State Board of Vocational Education. Glenn Strong and C. M. Scott are full time instructors.

Full information about the course may be obtained from Mr. Ed Claude, director, Trade and Industrial Education, State Board of Vocational Education, 405 Centennial Building, Springfield, Ill.

Hot stick crew changes pole on 3-phase line during Illinois training program.



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Company, Goodman, Mo.
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